

Corpus alienum – A rare case of tablespoon in the rectovesical pouch

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ABSTRACT

Ingestion of foreign bodies, mostly common household utensils, is not unusual in adults, with higher prevalence in individuals who are intoxicated, incarcerated, or mentally handicapped. These objects pass through the digestive tract in most cases, although some require medical intervention to aid their removal. A small number of detained objects can remain unnoticed for a long time until they cause complications through perforation and migration from the gastrointestinal tract. We describe the case of patient that was admitted after approximately one day of abdominal pain. The patient denied the admission of a foreign object into the abdominal cavity in any way. Ultimately, a tablespoon of 20 cm was taken from fibrous adhesions in the rectovesical pouch and septic shock developed as a result of perforated jejunum. For reasons of respiratory insufficiency and circulatory instability, treatment was more complicated for the patient.

Keywords: abdominal cavity, intestinal perforation, metal foreign body; rectovesical pouch, soup spoon.

1. INTRODUCTION

Ingestion of foreign, even sharp, or metallic, objects is a relatively common phenomenon in clinical practice (Chan 2010). It most often occurs in children under 3 years of age but has also been documented in adults. People with mental disabilities or psychiatric disorders are predisposed to this, as well as prisoners and intoxicated individuals (Ikenberry et al., 2011). Intentionally ingested objects are mostly common household utensils such as pens, spoons, toothbrushes, etc., while accidental ingestion is related to the intake of food or its parts such as e.g. bones (Obinwa et al., 2016). Most ingested bodies are eliminated from the gastrointestinal tract without having caused complications (Chan 2010) while 10-20% must be removed by endoscopic surgery and rarely, and less than 1% should be treated with surgery due to complications such as obstruction, perforation or fistula formation (Hernández et al., 2007). Migration of such foreign objects from the gastrointestinal tract to any abdominal organ after intestinal perforation is very rare and usually asymptomatic (Cevizci et al., 2014). The presence of a



migrating foreign body in the intra-abdominal space is then detected by chance (Chan, 2010).

We present a case in which, due to the size of the object and the description of its discovery, it is not possible to unambiguously determine the path of migration.

2. CASE REPORT

A 41-year-old patient was admitted into the emergency unit complaining of abdominal pain lasting 24 hours with radiation into the back. Medical history informed that the patient had been monitored for 10 years for hypertrophic cardiomyopathy, with documentation describing chronic heart failure with systolic dysfunction and left ventricle ejection fraction 25% of that in the August 2016 examination. He had suffered a third degree AV Block with replacement Junk Ryme-STP implantation of the ICD Cognis 100 D Guidance from 2012 without documented ventricular tachycardia or fibrillation. In July 2016, the patient underwent cardiac-stimulation repair following electrode dislocation. The patient had a history of passive hepatic congestion and developed mycotic pneumonia on the left side requiring hospitalization in August and September 2016. In October 2016, he experienced a sudden vascular cerebral event in the right carotid arteries and underwent thrombectomy with a good effect. He was moved to an internal clinic for decompensation of chronic heart failure and started treatment with Sacubitrile/Vasartan. Heart transplantation was performed in 2018, with status complicated by hernia in scar during a later postoperative period. In 2019, herniotomy was performed with a mesh repair of the defect and treated with Prograf (Takrolimus) 3mg morning/evening, Mifenax (Mykophenolic acid) 500 mg morning/evening, Nolpaza (Pantoprazole) 40 mg, and Rosucard (Rosuvastatin) 20 mg at the evening.

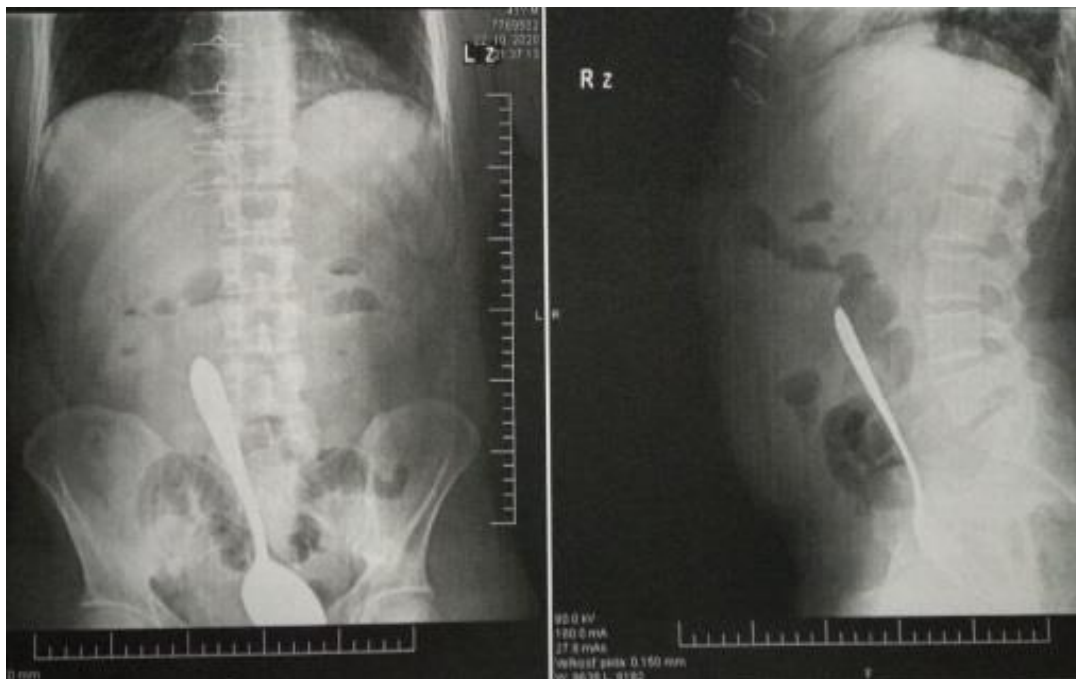


Figure 1 X-ray examination on emergency admission.

The patient presented with nausea, was afebrile, bowel movement present, and without problems with urination. Palpation examination revealed the abdomen was soft and without sensitivity or peritoneal irritation. Auscultation confirmed audible peristalsis. Examination per rectum revealed a suspicious tactile foreign object on the tip of the index finger. While sonographic examination of the abdomen did not show an evident foreign body, examination of the small pelvis revealed free anechogenic fluid in the rectovesical pouch up to a thickness of 5 cm with a convolute of small and large intestinal loops with reactive changes. X-ray of the abdomen in two projections showed an X-ray contrast object suspected of being a spoon (Figure 1). Hospitalization and extraction of a foreign body was therefore recommended for the patient. Despite being informed of the possible complications, the patient denied treatment, claiming no knowledge of how the foreign object appeared there. Analgesic treatment was given, and the patient left the hospital.

That same evening, the patient returned to the surgical clinic with a positive attitude towards hospitalization. The patient was placed on an examination bed, and colonoscopic examination was performed, showing no pathological changes on the large intestine mucosa. Internal and external hemorrhoidal nodules were present in the anal canal in typical places, without irritation. A

surgical revision was indicated. The patient started to experience gradual alteration of consciousness with development of septic shock. Turbid effusion present in the abdominal cavity was collected for cultivation. A spoon 20 cm long and 4.5 wide was found in rectovesical pouch, in fibrous adhesion and perforated jejunum. The spoon was extracted, an approximately 20 cm section of ileum was resected with the perforation hole and three abdominal drains were placed. The patient was hyposaturated before intubation and traces of vomit were visible in the oral cavity, although not displaying the normal pattern of distribution. After orotracheal intubation, yellow fluid was aspirated endotracheally, most probably consisting of gastric contents. Perioperatively, the patient experienced circulatory instability with a need for catecholamine support. He was transferred to the Intensive Care Unit (ICU) for respiratory insufficiency and circulatory instability.

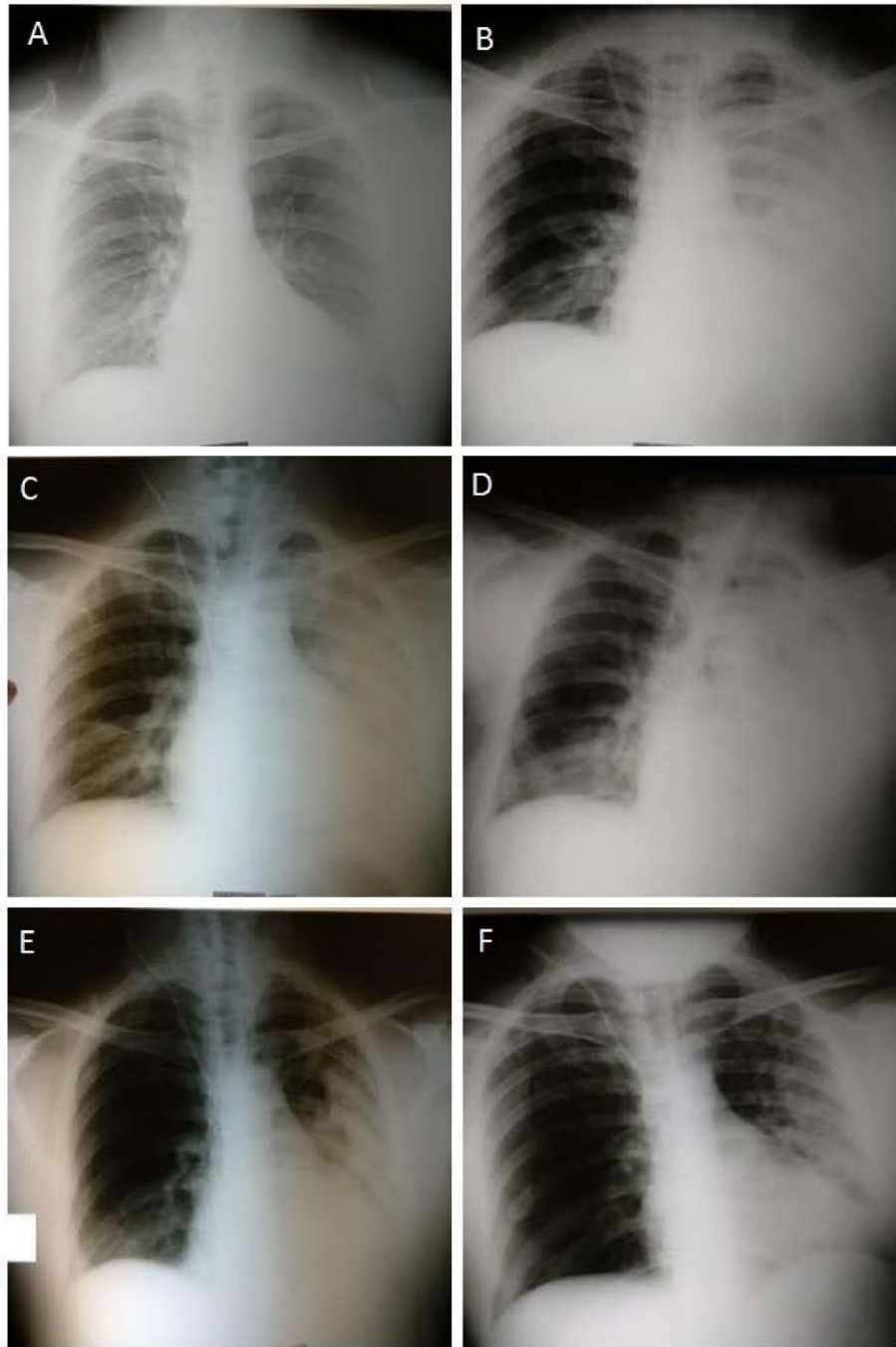


Figure 2 Patient's chest X-ray examination A – before laparotomy; B - day 1 on ICU; C - day 2 on ICU; D - day 4 on ICU, E - day 7 on ICU; F - before transfer to the transplantation department.

Day 1 after admission on ICU, patient was administered with propofol and sufentanil for analgesia, Tachycardia 130/min; noradrenaline 0.1µg/kg/min; and body temperature up to 37 °C. A full summary of laboratory results is provided in Table 1. Broad-

spectrum antibiotic treatment was started with Sulperazone (cefoperazone/sulbactam), Linezolid, Metronidazole and Fluconazole. Bronchoscopy was performed for data on possible aspiration, without confirmation of pathology in the right bronchial basin while gastric juice with an admixture of blood was present in the left bronchus. All material was collected for culture examination. Due to respiratory acidosis, pulmonary ventilation was set to pressure-controlled ventilation with inspiratory pressure 16 cmH₂O, PEEP 7 cmH₂O, FiO₂ 0.5. X-ray examination (Figure 2B) found a right wing without focal-infiltrative changes. The left wing had diffusely reduced transparency, pleural effusion in combination with pneumonic infiltrate. The patient was administered albumin during circulatory resuscitation and fresh frozen plasma and haemostatics for hypocoagulation. Antigen rapid test for COVID-19 was negative.

On day 2 on ICU, the patient's sedation was gradually reduced. He opened his eyes to reach out but was still weak and passive. Heart rate was measured at between 70/min and 90/min during the day. Possible reduction of catecholamine support was indicated to a dose of 0.02 µg/kg/min. Overview of inflammatory parameters is provided in Table 1. Bronchoscopy did not show significant pathology. Control chest X-ray (Figure 2C) also unchanged with persistent left infiltrate. USG of the pleural cavities did not show a large amount of fluid and puncture of the effusion was not indicated. According to the examination of blood gases, it was possible to reduce PEEP to 5 cmH₂O, FiO₂ to 0.45 and then to 0.4, while SpO₂ was at 97%. Detection of anaemia indicated administration of 1 erythrocyte mass. Due to the immunosuppressive treatment that the patient could not receive at the time, the National Heart Disease Centre was consulted where a heart transplant was performed with the recommendation of hydrocortisone 200 mg/day iv. Low molecular weight heparin was used in the prevention of thromboembolic disease and parenteral nutrition was started.

Table 1 Overview of selected laboratory parameters and examinations.

Day on ICU/ parameter	0	1	2	3	4	5	6	7	8	9
CRP (mg/l)		134	263	263	146	102	86	70	58	43
PCT (µg/l)		1.6	4.85	2.89	1.53	0.97	0.6	0.36	0.27	0.21
Leu 10 ⁹ /l		3.48	12.0	12.5	11.9	6.7	6.8	5.3	6.72	8.25
Lactate (mmol/l)		2.74	2.41	1.43	1.45	0.96	0.83	0.83	-	1.06
RTG	√	yes	yes	yes	yes	-	yes	yes	-	-
CT	-	-	-	yes	-	-	-	-	-	-
ALV	-	yes	yes	NIV/M	OTC+ NIV/H	NIV/H	NIV/H	O ₂ mask	O ₂ mask	O ₂ nose
Bronchoscopy	-	yes	yes	-	yes	-	-	-	-	-
NA µg/kg/min		0.1	0.02	stop	-	-	-	-	-	-
Diuresis (ml)		3200	2100	2500	3200	3500	4400	4600	2670	2470
Balance (ml)		+1400	+2200	+700	+650	+100	-800	-2000	-2700	-470

CRP- C-reactive protein, PCT- procalcitonin, NA-noradrenaline, Leu- leukocytes, CT- computed tomography, ALV- artificial lung ventilation, NIV/M- non-invasive mask ventilation, NIV/H- non-invasive helmet ventilation, OTC- orotracheal cannula.

On day 3 on ICU, sedation with propofol was completely stopped; analgesic treatment was continued by continuous infusion of pethidine. At the end of sedation, circulatory support by noradrenaline was stopped during stabilized blood pressure assessments. Heart rate was measured at a frequency of 80/min. The patient was brought to full consciousness and extubation was possible. O₂ mask was applied with the need for oxygen treatment due to oxygen saturation of about 93% and desaturation without oxygen therapy. A dry irritating cough also appeared, so codeine was added to the treatment. Chest X-ray showed persistent left shading, indistinct USG finding of pleural effusion. Therefore, the attending physician ordered a CT scan of the lungs (Figure 3). Re-consulted National Heart Disease Centre with a recommendation to add tacrolimus to the treatment regime, the patient remained afebrile.

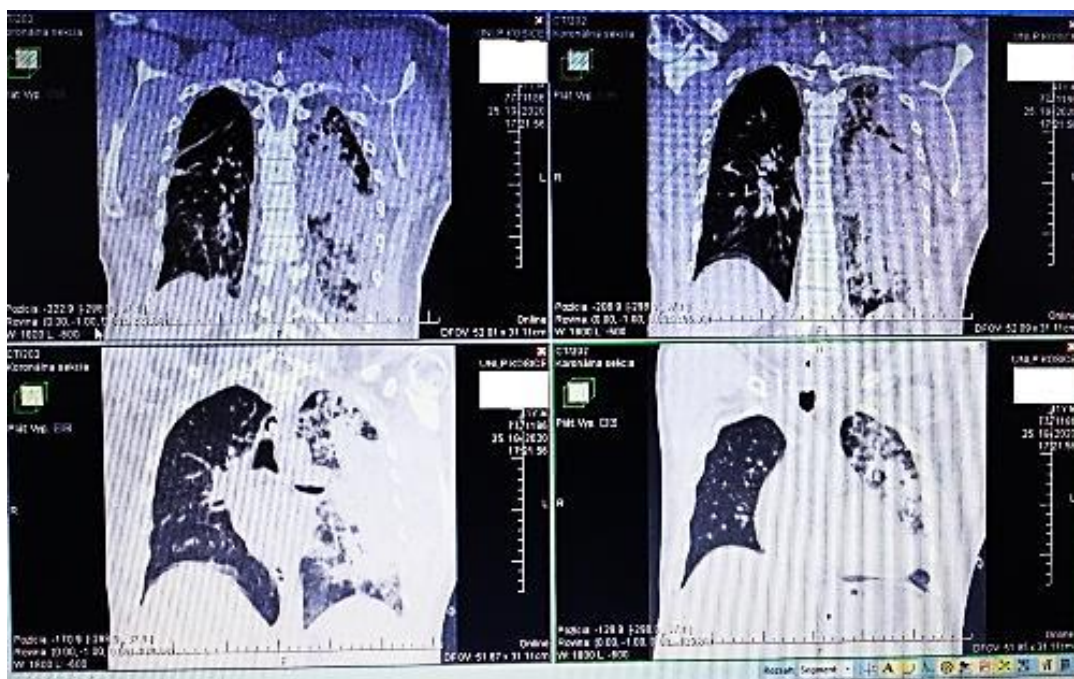


Figure 3 Computed tomography of chest - showed non-aerial almost the entire left wing - the cause of aspiration bronchopneumonia, condensation in the lung parenchyma. Trachea and main bronchi are without pathological content. Only minimal amount of fluid in both pleural spaces.

On day 4 on ICU, patient was conscious, sedated by low dose dexmedetomidine, together with anxiolytics, non-invasive ventilation with a face mask and circulatory stabilization. Control bronchoscopic examination was performed in cooperation with a pulmonologist. During the examination, a haemorrhagic-yellow-orange secretion was found in the left bronchus. Material was taken for culture, and for biochemical examination of AMS, PCR for EBV, CMV, pneumocystis and for fungal infections in an immunocompromised patient. After the procedure, the patient was non-invasively ventilated with a helmet with sufficient oxygen saturation. Biseptol (Sulfamethoxazole + Trimethoprim) was added to treat an atypical pneumonia. Subsequently, a chest X-ray (Figure 2D) showed no significant change compared to previous images (Figure 2A-C). Myfenax (mycophenolic acid) and Prednisone were added to the treatment after consultation with the transplant department and continued with tacrolimus while monitoring its level. Hydrocortisone was discontinued from therapy, and parenteral nutrition continued.

On day 9 on ICU, the patient felt occasional nausea while taking his diet. Ventilation and circulation were stabilized, with diuresis intermittently induced by furosemide. Treatment was continued with Cefoperazone/Sulbactam and Linezolid, immunomodulatory therapy, anxiolytics, low molecular weight heparin for the prevention of thromboembolic disease, and anti-diuretics for ongoing diarrhoea. The patient was hospitalized on ICU for the next two days, during which his condition did not change significantly. Mentally, the patient was sometimes in a negative mood despite anxiolytic treatment. Prescribed respiratory rehabilitation was performed, and the patient received an oral diet of porridge. A dry, irritating cough persisted without expectoration, together with diarrhoea. The sutures from the laparotomy were extracted and the patient's transfer to the transplantation department of the hospital was approved for further treatment. A chest X-ray was performed (Figure 2F) and the antigen rapid test for COVID-19 was repeated with a negative result. Patient is under continuous follow up.

3. DISCUSSION

Most ingested foreign bodies pass seamlessly through gastrointestinal tract within a week. Around 20% need endoscopic removal, and up to 1% cause complications from perforation (Dominguez et al., 2009). Retained bodies that do not pass through the GIT lead to inflammation, adhesion and fibrosis formation over time. This applies in particular to larger foreign bodies, for which some parts of the GIT become an obstacle. Most bodies longer than 6 cm tend to be deposited in places of natural narrowing, such as the pylorus and the C curve of the duodenum with a rare transition to the large intestine (Erbil et al., 2013). Goh et al., (2006) mentioned the ileocecal valve, and Meckel's diverticulum or the sigmoid S-curve as others.

Several case studies describe spoons retained in the GIT. Shamim et al., (2019) showed the case of the asymptomatic chronic retention of two metallic spoons of 13.5 cm which were densely adherent to the gastric mucosa. The teaspoons had been present for at least 7 years since they were first detected in the body and had not passed the stomach. Objects longer than 6-10 cm are less likely to be able to pass through a duodenal sweep, but it is possible. Song et al., (2009) presented a case where a 15 cm spoon passed through the pylorus and duodenal loop and reached the jejunum without complication. A teaspoon 13.5 centimetres long and 2.5 centimetres wide was extracted by colotomy in a patient 10 years after he ingested two teaspoons in a state of alcohol intoxication (Deeba et al., 2009). One of the spoons passed spontaneously per rectum, while the second was found intraluminal in the ascending colon after he intermittently experienced some vague abdominal pain in the right iliac fossa.

This case points not only to the passage of such large objects through the GIT but also to their possible slow migration through the intestinal wall. Migration of foreign bodies from the gastrointestinal tract is extremely rare, mostly occurring in the ileocecal and rectosigmoid regions (Cevizci et al., 2014). In our described case, a 20 cm long tablespoon was found in fibrous adhesions in the rectovesical pouch. Perforation can occur slowly when the foreign body is held at anatomical angles or constrictions, such as the ileocecal valve and sigmoid curve, which provide sufficient time for the omentum and surrounding visceral tissues to seal the perforation. This can eventually lead to the body merging into these structures with inflammation accompanying this process (Deeba et al., 2009). Furthermore, parts of the duodenum and the colon are retroperitoneal and may have a more subtle presentation of perforation (Goh et al., 2006). Peritoneal adhesions may form quite rapidly after the insult, but the maturing process is usually slow and can last for months or years (Ghonge and Ghonge, 2014).

4. CONCLUSION

The patient's presentation indicates the long-term presence of a large object, namely a tablespoon, in the gastrointestinal tract and its migration into the rectovesical pouch, there accompanied by signs of irritation and the formation of adhesions. However, the patient denied ingestion, which could be explained very likely by mental lability and/or intoxication as described in anamnesis as a result of the frequent and difficult surgeries. The presence of a spoon was subsequently detected following manifestations of discomfort caused by acute intestinal perforation with rapidly developing peritonitis and septic shock.

Informed Consent

Patient signed the informed consent.

Conflict of Interest

None of the authors has financial/commercial conflicts of interest with the published data.

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Data and materials availability

All data associated with this study are present in the paper.

REFERENCES AND NOTES

1. ASGE Standards of Practice Committee, Ikenberry SO, Jue TL, Anderson MA, Appalaneni V, Banerjee S, Ben-Menachem T, Decker GA, Fanelli RD, Fisher LR, Fukami N, Harrison ME, Jain R, Khan KM, Krinsky ML, Maple JT, Sharaf R, Strohmeyer L, Dominitz JA. Management of ingested foreign bodies and food impactions. *Gastrointest Endosc* 2011; 73:1085-91.
2. Cevizci MN, Demir M, Demir B, Demir I, Kilic O. Migration of ingested sewing needle from within sigmoid colon to outside of the lumen. *Pak J Med Sci* 2014; 30:1422-4.
3. Chan KW. An unusual case of foreign body in the anterior abdominal wall. *J Clin Med Res* 2010; 2:93-5.
4. Deeba S, Purkayastha S, Jeyarajah S, Darzi A. Surgical removal of a tea spoon from the ascending colon, ten years after ingestion: a case report. *Cases J* 2009; 2:7532.
5. Dominguez S, Wildhaber BE, Spadola L, Mehrak AD, Chardot C. Laparoscopic extraction of an intrahepatic foreign body after transduodenal migration in a child. *J Pediatr Surg* 2009; 44:e17-20.
6. Erbil B, Karaca MA, Aslaner MA, Ibrahimov Z, Kunt MM, Akpınar E, Özmen MM. Emergency admissions due to swallowed foreign bodies in adults. *World J Gastroenterol* 2013; 19:6447-52.

7. Ghonge NP, Ghonge SD. Computed tomography and magnetic resonance imaging in the evaluation of pelvic peritoneal adhesions: What radiologists need to know?. *Indian J Radiol Imaging* 2014; 24:149-55.
8. Goh BK, Chow PK, Quah HM, Ong HS, Eu KW, Ooi LL, Wong WK. Perforation of the gastrointestinal tract secondary to ingestion of foreign bodies. *World J Surg* 2006; 30:372-7.
9. Hernández Anselmi E, Gutiérrez San Román C, Barrios Fontoba JE, Ayuso González L, Valdés Dieguez E, Lluna González J, Roca Molla A, García-Sala Viguer C, Gómez Montes J, Cortina Orts H. Intestinal perforation caused by magnetic toys. *J Pediatr Surg* 2007; 42:E13-6.
10. Obinwa O, Cooper D, O'Riordan JM, Neary P. Gastrointestinal foreign bodies. In: Garbuzenko DV, ed. *Actual problems of emergency abdominal surgery*. InTech, Croatia; 2016. pp 75-96.
11. Shamim AA, Zuberi, MM, Shariff AH. Laparoscopic retrieval of two intragastric spoons at least seven years after ingestion. *Laparosc Endosc Rob Surg* 2019; 2:77-9.
12. Song Y, Guo H, Wu JY. Travel of a mis-swallowed long spoon to the jejunum. *World J Gastroenterol* 2009; 15:4984-5.